

CLAIMS

1. A stator assembly for an dynamoelectric machine, comprising:
 - a generally cylindrically-shaped stator core having a plurality of circumferentially spaced axially-extending core slots in a surface thereof and each having a respective radial depth and a plurality of tooth members therebetween, said core slots extending between a first and a second end of said stator core;
 - a plurality of clips, each shaped to closely fit into one of said core slots for lining each respective core slot and having a pair of leg members extending from a back end and forming an aperture therebetween, said clips being formed from a magnetically permeable material; and
 - a stator winding having substantially straight wire segments received by said clips and said substantially straight wire segments of said stator winding and said clips being electrically insulated from one another,
 - wherein at least one of said extending leg members is bent over a portion of said substantially straight wire segments in said clips, narrowing said aperture between said extending leg members
 - wherein a plurality of slits are made along the front ends of the clips.
2. The stator assembly according to claim 1 wherein said clips are generally U-shaped.
3. The stator assembly according to claim 1 wherein said clips are made from a magnetic permeable material.
4. The stator assembly according to claim 1 wherein said aperture is narrowed to a width smaller than the width of said straight wire segments.

5. The stator assembly according to claim 1 wherein said straight wire segments of said stator winding and said clips are electrically insulated from one another by insulating members lining the inner surfaces of said clips.

6. The stator assembly according to claim 5 wherein said insulating members are made from a paper, a paper composite, or another form of insulation having electrically insulating properties.

7. The stator assembly according to claim 5 wherein the insulation member is a coating which is applied to the inner surface of the clips.

8. The stator assembly according to claim 1 wherein said substantially straight segments have a substantially rectangular cross section.

9. The stator assembly according to claim 1 wherein said stator winding and clip assemblies are each press fit respectively into the stator core slots.

10. The stator assembly according to claim 1 wherein the clips and the stator winding are varnished to fixedly bond them or adhesively bonded to the stator core slots.

11. The stator assembly according to claim 1 wherein a stator winding pattern consists of n phase conductors, and each conductor includes straight wire segments aligned in at least one row in each slot.

12. The stator assembly according to claim 1 wherein said clips are retained in said core slots by adhesively bonding together said clips and said core slots

13. The stator assembly according to claim 1 wherein said plurality of slits are made along the front ends and at least a portion of sides of the clips.

14. A stator assembly for an dynamoelectric machine, comprising:
a generally cylindrically-shaped stator core surrounded axially by a rotor, having a plurality of circumferentially spaced axially-extending core slots in a exterior surface thereof and each having a respective radial depth and a plurality of tooth members therebetween, said core slots extending between a first and a second end of said stator core;
a plurality of clips, each shaped to closely fit into one of said core slots for lining each respective core slot and having a pair of leg members extending from a back end and forming an aperture therebetween, said clips being formed from a magnetically permeable material; and
a stator winding having substantially straight wire segments received by said clips and formed in at least one row of said substantially straight wire segments, said substantially straight wire segments of said stator winding and said clips being electrically insulated from one another,
wherein at least one of said extending leg members is bent over a portion of said substantially straight wire segments in said clips, narrowing said aperture between said extending leg members, and clips and substantially straight wire segments assemblies are each inserted into one of the plurality of core slots.
wherein a plurality of slits is made along the front ends of the clips.

15. A method for assembling a stator assembly for an dynamoelectric machine, the method comprises:
providing a generally cylindrically-shaped stator core having a plurality of circumferentially spaced axially-extending core slots in a surface thereof, and each having a respective radial depth and a plurality of tooth members therebetween, said core slots extending between a first end and a second end of the stator core;
providing a plurality of clips, each shaped to closely fit into one of the core slots, each having a pair of leg members extending from a back end and defining an aperture between them;
applying an insulating member to an inner surface of each of said clips;
spreading said clips and enlarging the aperture between said

extending leg members;

providing a stator winding having a plurality of substantially straight segments, and inserting said substantially straight wire segments of said stator winding in said clips via their respective apertures;

allowing said clips to return to their original shape and narrowing said aperture between said extending leg members, and

inserting said clips and stator winding assembly into said core slots.

16. The method according to claim 15 wherein said clips are generally U-shaped.

17. The method according to claim 15 wherein said insulating members are made from paper, paper composite, or another form of insulation having electrically insulating properties.

18. The method according to claim 15 wherein said clips are made from a magnetically permeable material.

19. The method according to claim 15 wherein said aperture is narrowed to a width smaller than the width of said straight wire segments.

20. The method according to claim 15 wherein said straight wire segments of said stator winding and said clips are electrically insulated from one another by insulating members lining the inner surfaces of said clips.